GIS Technologies for Data Collaboration

Mark Holmes, GISP
DTMB – Geospatial Services Manager

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Presentation Outline

- Michigan Statewide GIS Data Systems and Programs
- GIS Coordination Across Organizations
- NENA GIS Standards
- Authoritative Data in Michigan for NENA GIS Data Model
- Additional GIS Data Layers
- 9-1-1 GIS Repository

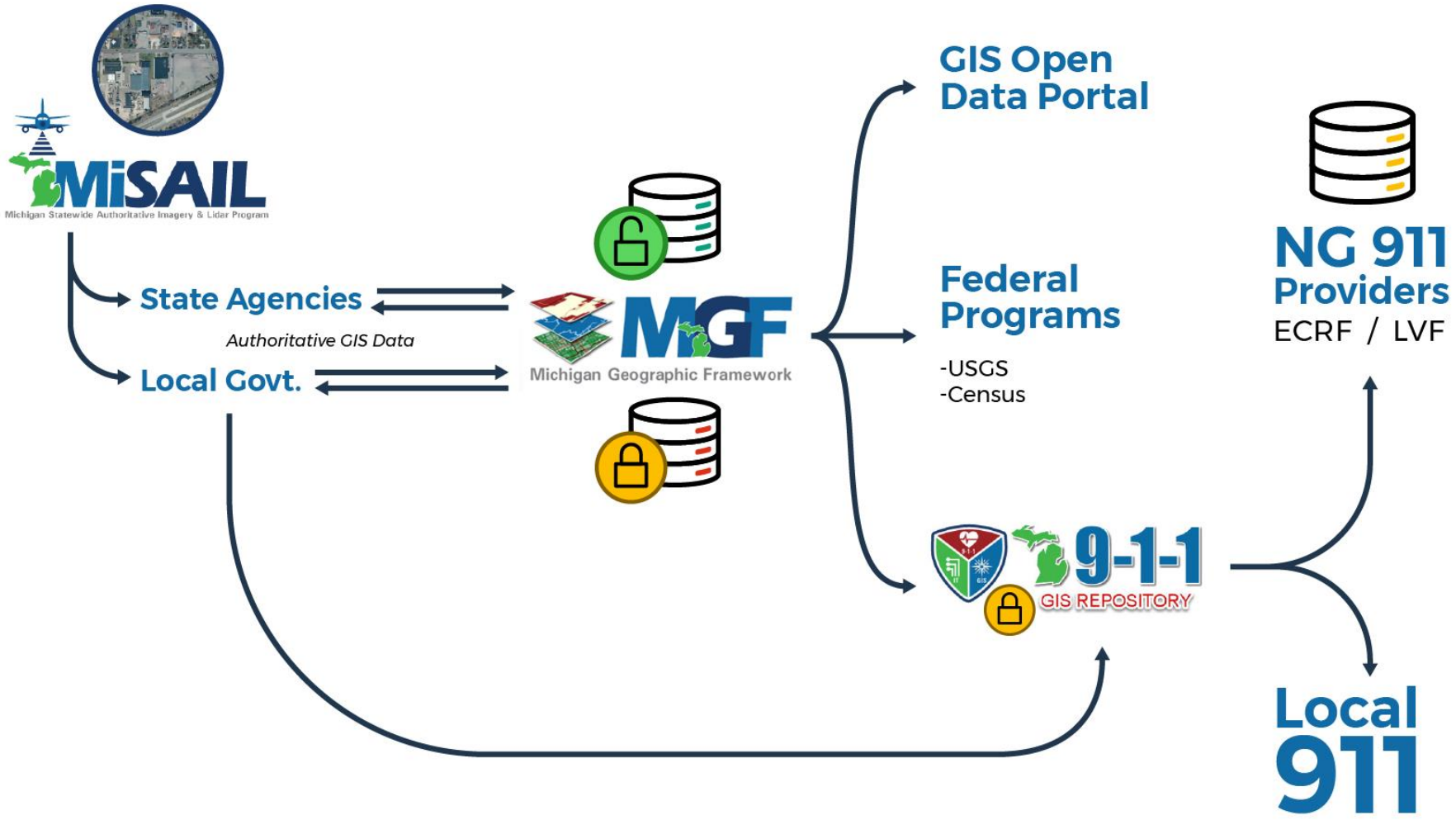
Michigan GIS Data Systems and Programs

- Michigan Geographic Framework
  - Implemented in 1990s
  - Statewide base mapping
  - Follows national data guidelines
- Michigan 9-1-1 GIS Repository
  - Implemented 2012
  - Aggregated base layers for 9-1-1
  - For 9-1-1 use
- Michigan Open Data Portal
- Michigan Statewide Aerial Imagery and LiDAR Program

9-1-1 GIS Repository

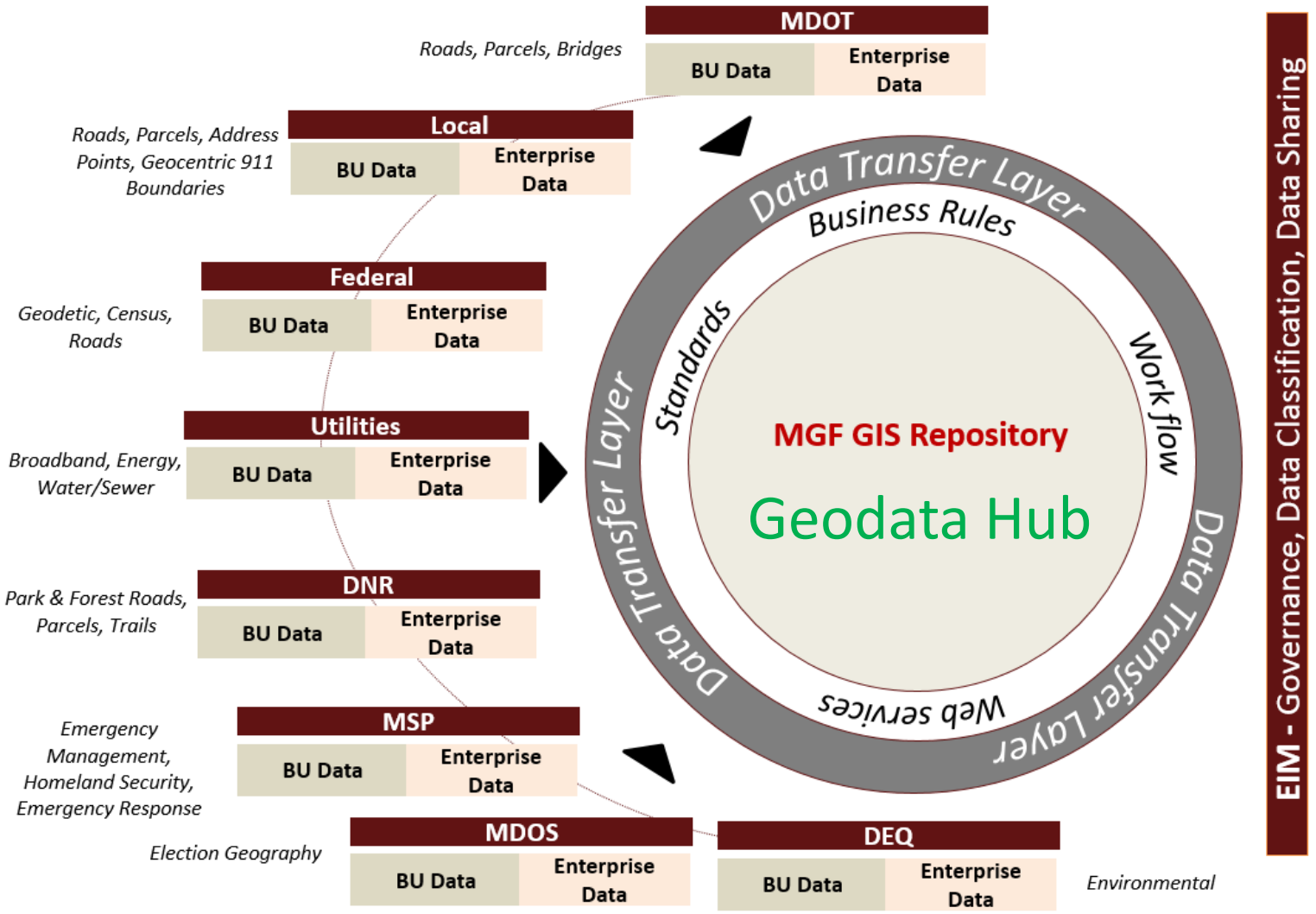
- Created a central 9-1-1 GIS Repository
  - Enabling PSAPs to share GIS information
  - Establishing MOAs
  - Setting standards for GIS data exchange
  - Framework for NG9-1-1 call routing
- Statewide Public Safety Answering Point (PSAP) Boundary Layer
- Statewide Road Centerline Layer
- Address Points and Emergency Service Zone layer schemas

GIS Coordination and Integration



MGF Distributed Editing Data Hub

Michigan Geographic Framework



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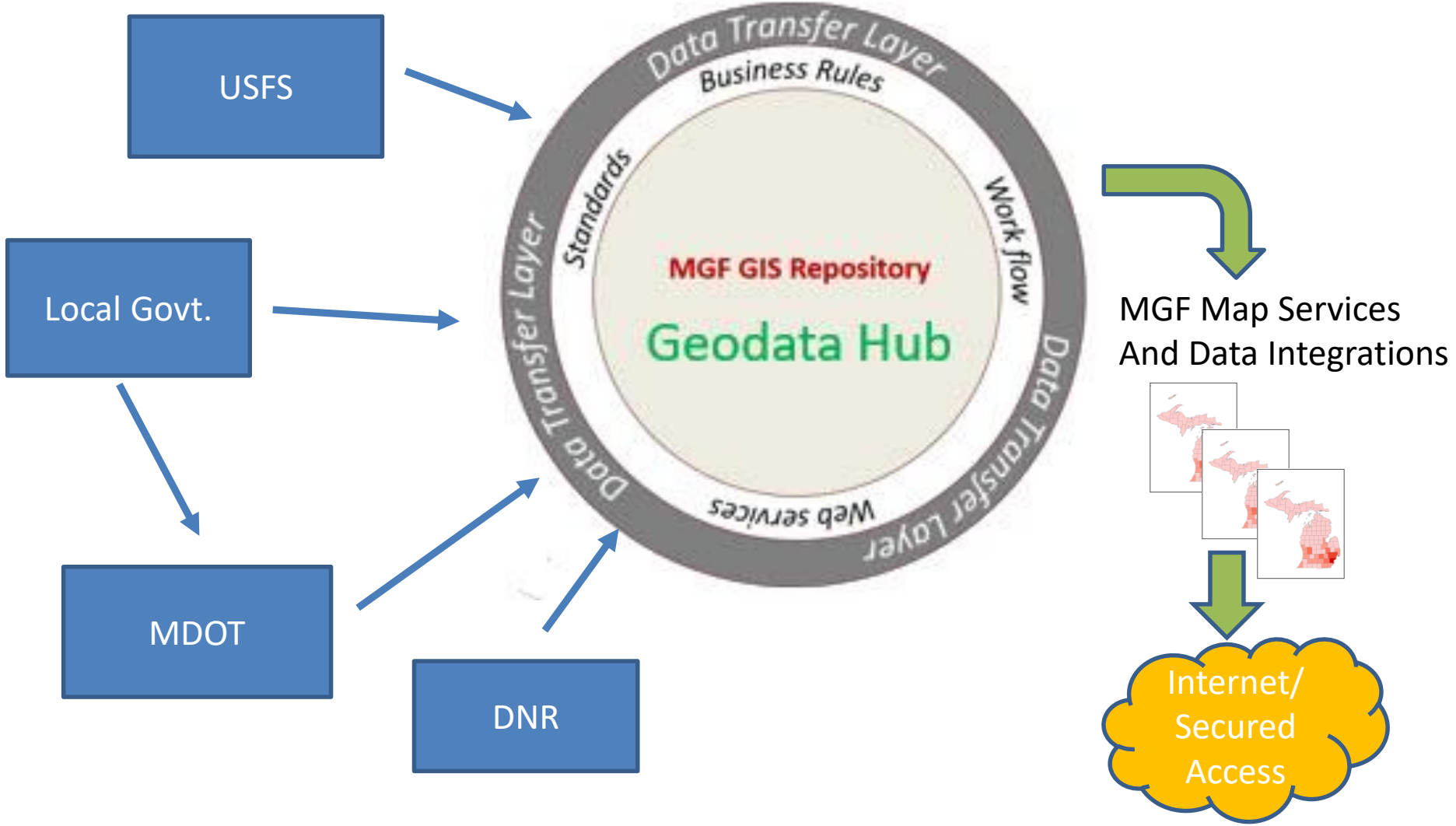
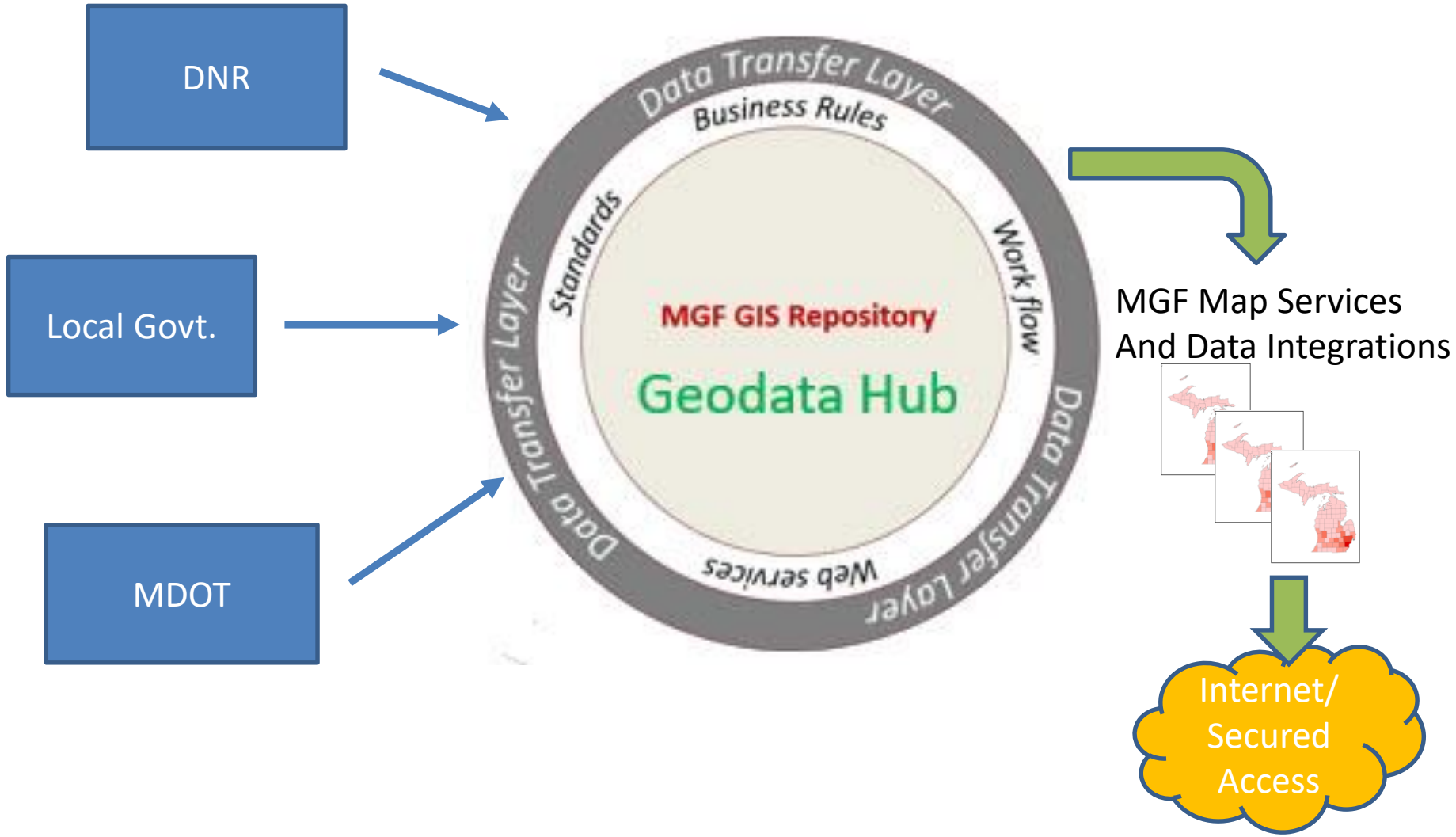
MGF Road Centerline Data Flow



MGF Culvert Data Flow



Trending Topics about GIS Data for NG 9-1-1

- NENA NG 9-1-1 GIS Model Standard outlines recommended GIS data
  - Released June 2018
- Continued standardization, validations and updates are common themes
- Notifications and error resolutions are key considerations

Other notes GIS in Michigan:

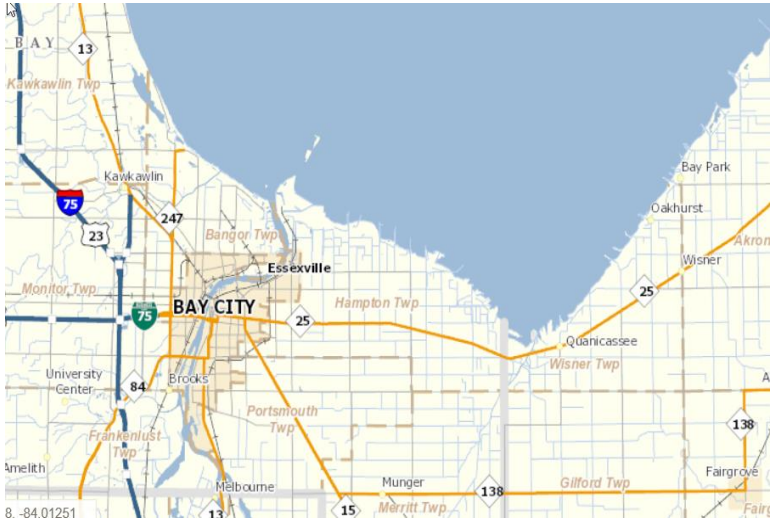
- Michigan is one of leading states for GIS data coordination
- Michigan one of few states without some key statewide GIS layers
- Trends of open data across the nation

GIS Data Standards for NG 9-1-1

- NENA NG 9-1-1 GIS Model Standard - Required Layers

REQUIRED – These layers MUST be available for the ECRF and LVF to function, and are required for call taking and dispatch operations:

- Road Centerlines
- Site/Structure Address Points
- PSAP Boundary
- Emergency Service Boundary (this MUST include Law, Fire, and Emergency Medical Service (EMS) as separate layers)
- Provisioning Boundary



Authoritative sources for Michigan:

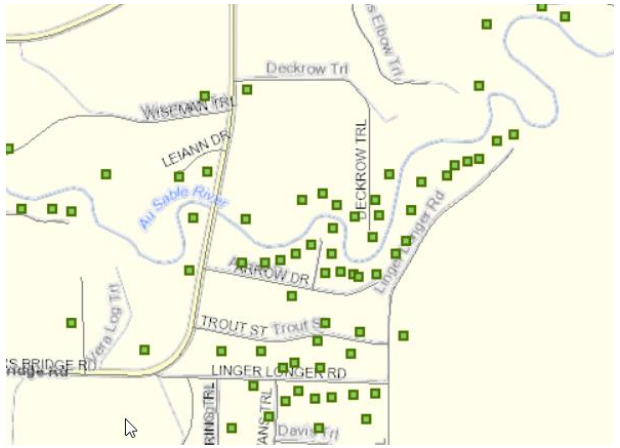
- GIS Centerlines for 9-1-1 – Local Govt (via 9-1-1 repository)
- Site Address Pts – Local Govt. (via 9-1-1 repository)
- PSAP Boundaries – MGF (provided by local govt/via 9-1-1 rep.)
- Emergency Response Layers (Fire, Police, EMS) – Local Govt

GIS Data Standards for NG 9-1-1

- NENA NG 9-1-1 GIS Model Standard - Strongly Recommended Layers

Strongly Recommended – These layers may aid in the functionality of the ECRF and LVF and are strongly recommended for call taking and dispatch operations:

- Street Name Alias Table
- Landmark Name Part Table
- Complete Landmark Name Alias Table
- States or Equivalents
- Counties or Equivalents
- Incorporated Municipality Boundary
- Unincorporated Community Boundary
- Neighborhood Community Boundary
- Other Emergency Service Boundaries (these MAY include, but are not limited to, Poison Control, Forest Service, Coast Guard, Animal Control, etc.)



Authoritative sources for Michigan:

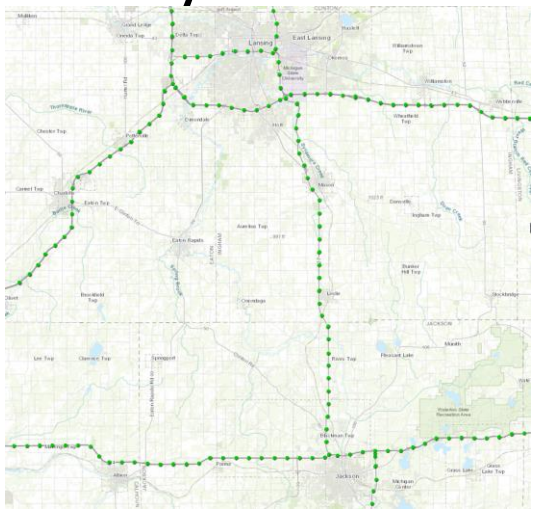
- Landmarks – Local Govt. and MGF
- Street Name Alias Table – Local and MGF
- Boundaries
  - State – MGF
  - County – MGF
  - Townships – MGF
  - City – MGF
  - Villages – MGF
  - State Parks – MGF (DNR)
  - State Forests – MGF (DNR)
  - National Forests – USFS

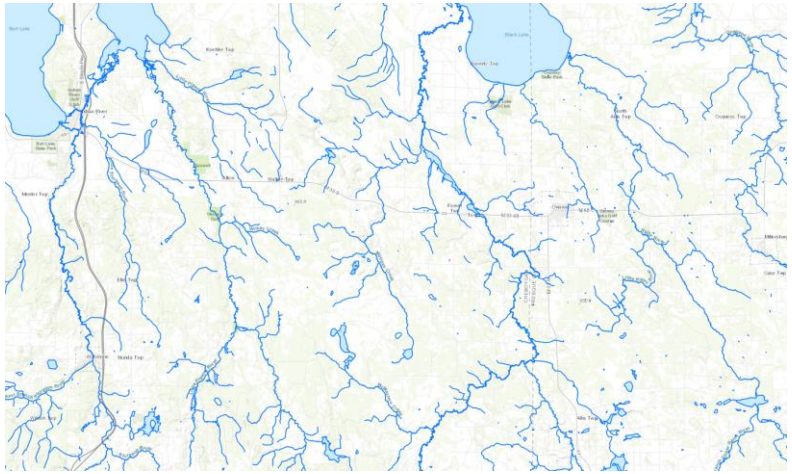
GIS Data Standards for NG 9-1-1

- NENA NG 9-1-1 GIS Model Standard - Recommended Layers

Recommended – Other layers in this document that complete the minimum recommended GIS data for NG9-1-1 and E9-1-1 call taking and dispatch operations:

- Railroad Centerlines
- Hydrology Line
- Hydrology Polygon
- Cell Site Location
- Mile Marker Location





Authoritative sources for Michigan:

- Railroads – MGF (MDOT)
- Hydrography Line – MGF (NHD Model)
- Hydrography Polygon – MGF (NHD Model)
- Cell Site Location – TBD
- Mile Marker Location – MGF (MDOT, Local)

Michigan GIS Data Flows

- Michigan Geographic Framework Boundary Update Flows

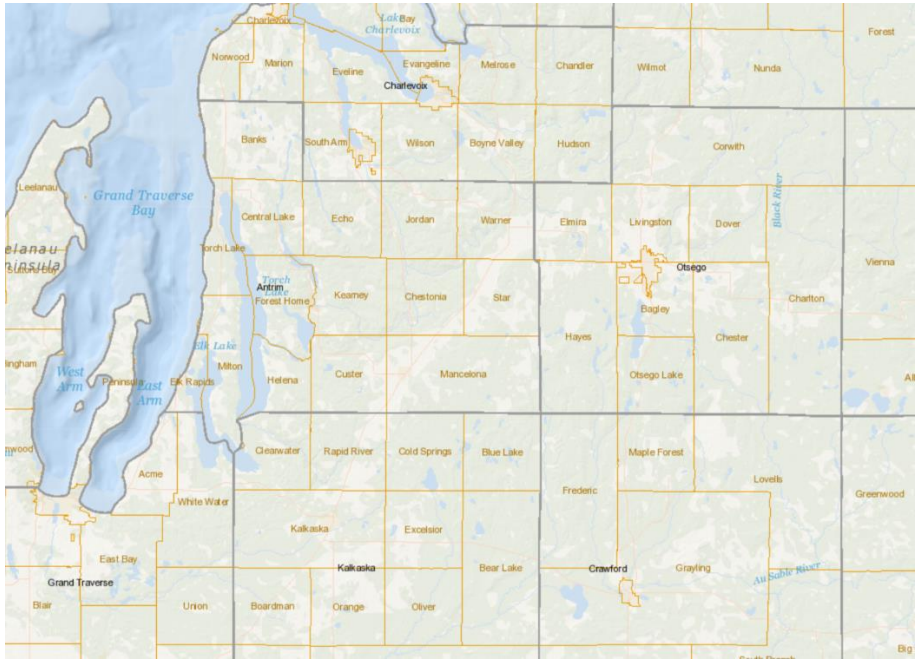
MDOS
- Notify of Annexation

DTMB
- Maps Annexation

MDOT
- Reviews and approves

DTMB
- Finalize Map

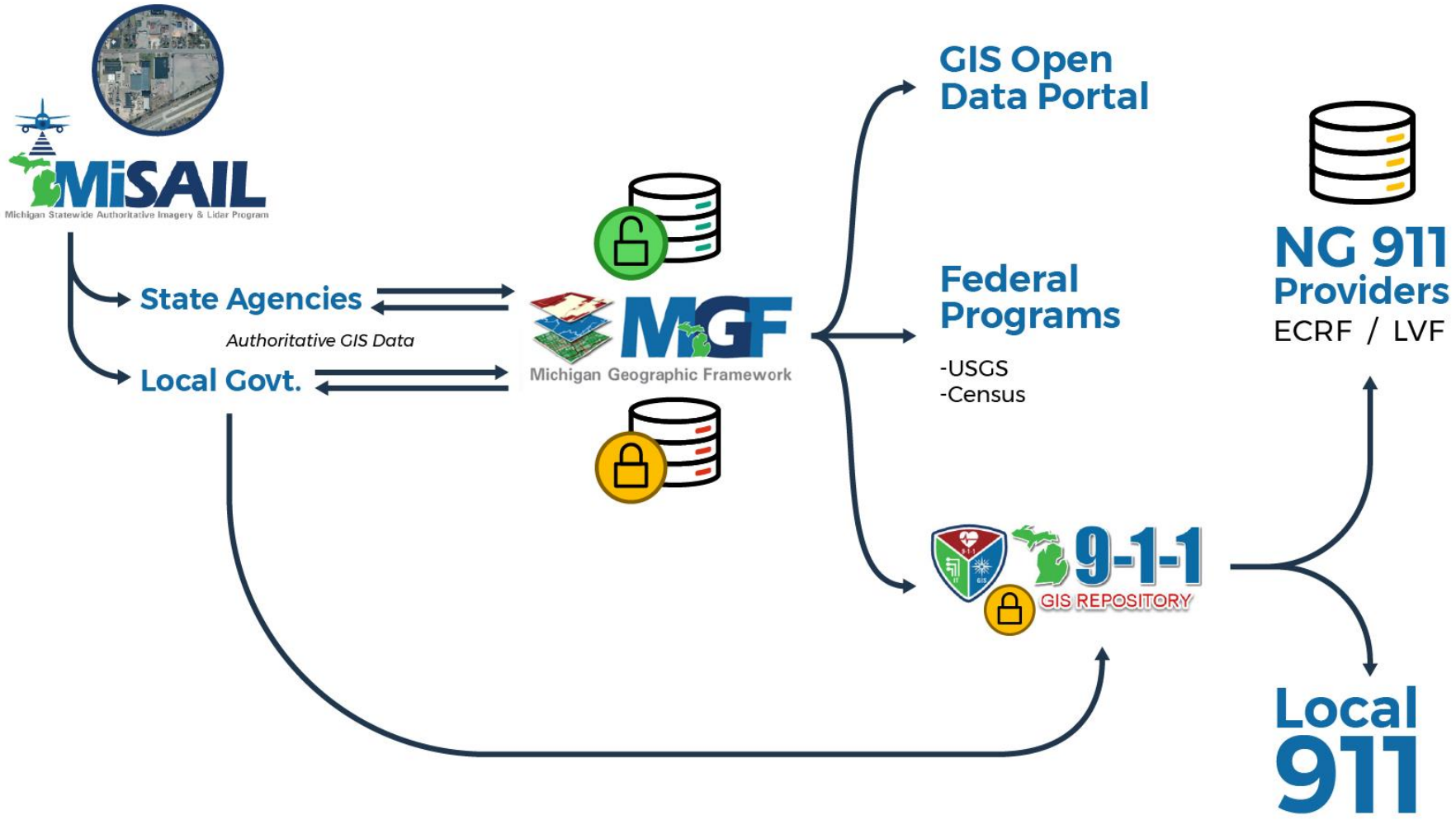
DTMB
- Add to MGF; Send to Census



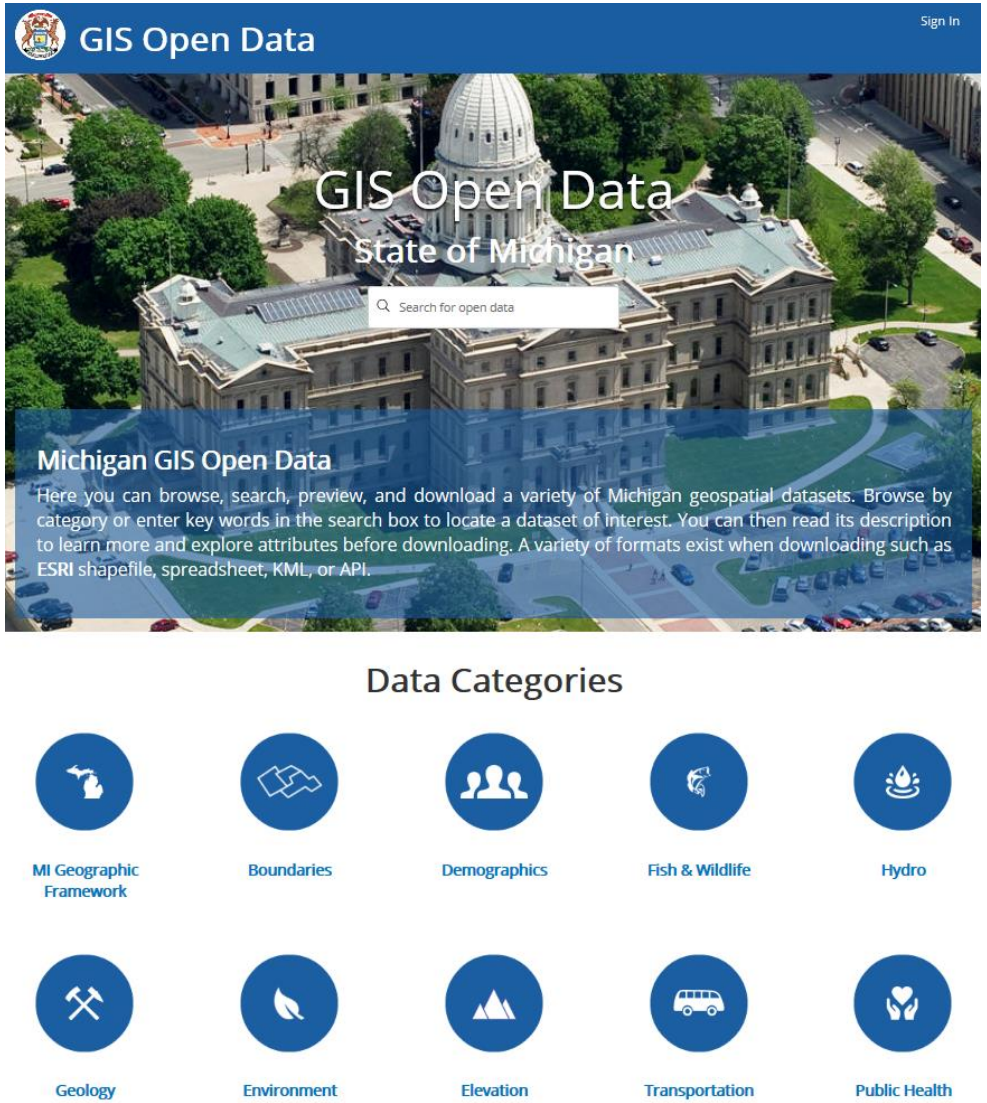
Michigan GIS Data Coordination

- Michigan Geographic Framework Authoritative GIS Data
  - Additional Data
    - Trails
    - Hospitals
    - Surgical Outpatient Facilities
    - Nursing Homes
    - Psychiatric Hospitals
    - Schools
    - Child Care
    - Adult Foster Care
    - Substance Abuse Disorder Care
    - Wells
  - Other Layers of Interest

GIS Coordination and Integration



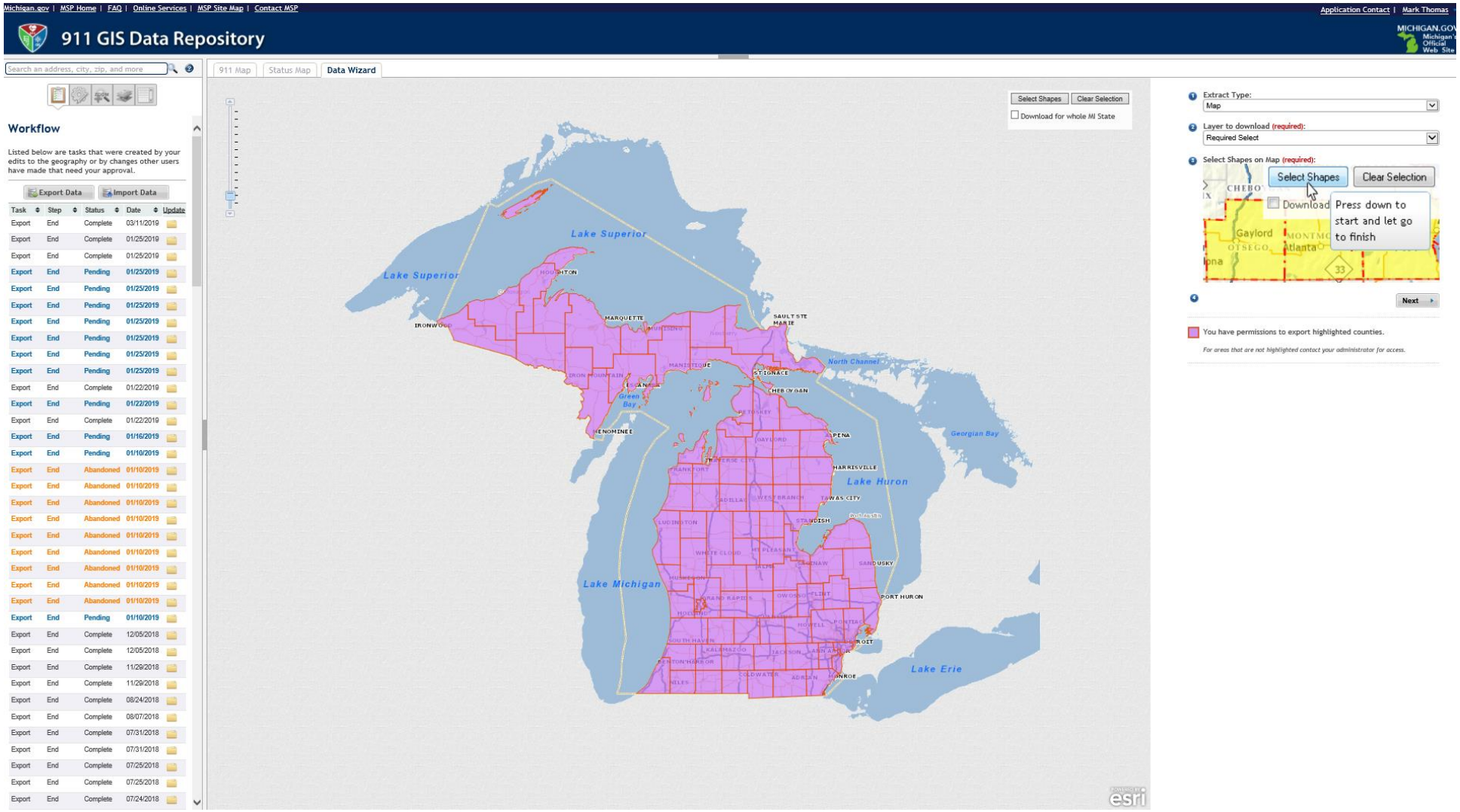
Michigan GIS Open Data



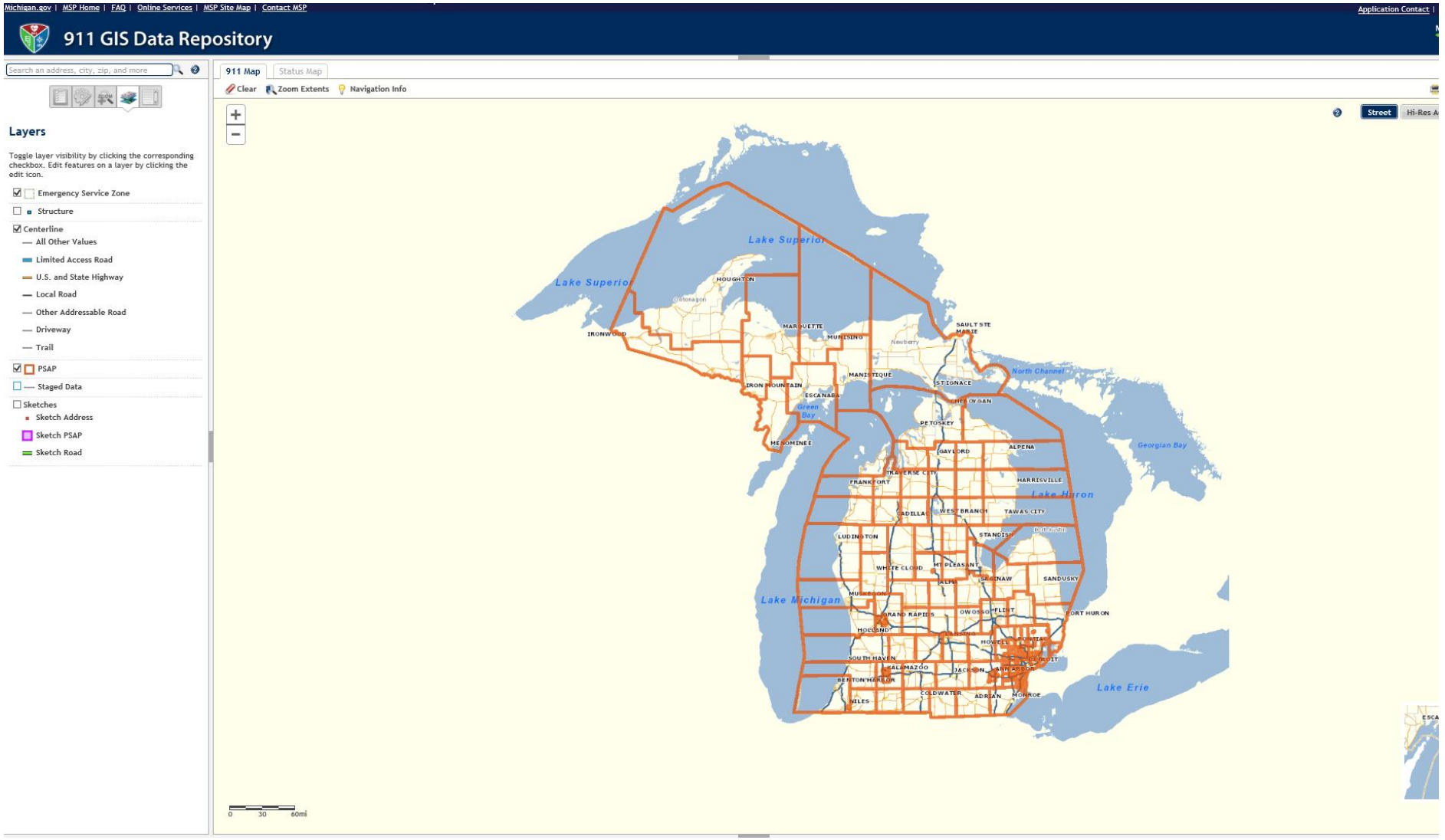
9-1-1 GIS Repository

- Import GIS data into repository
  - Field mapping to repository standard
  - QA/QC tools to validate data and downloadable report
- Export tool
  - Export data back out to your data schema
  - Export other PSAPs data (need export permission from PSAP)
- Data Viewer
  - PSAPs can use viewer as a mapping tool
  - Search, measure, aerial imagery, topographic images
- Backup of data and securely accessible outside of PSAP

9-1-1 GIS Repository – Importing and Exporting



9-1-1 GIS Repository – Map Viewer



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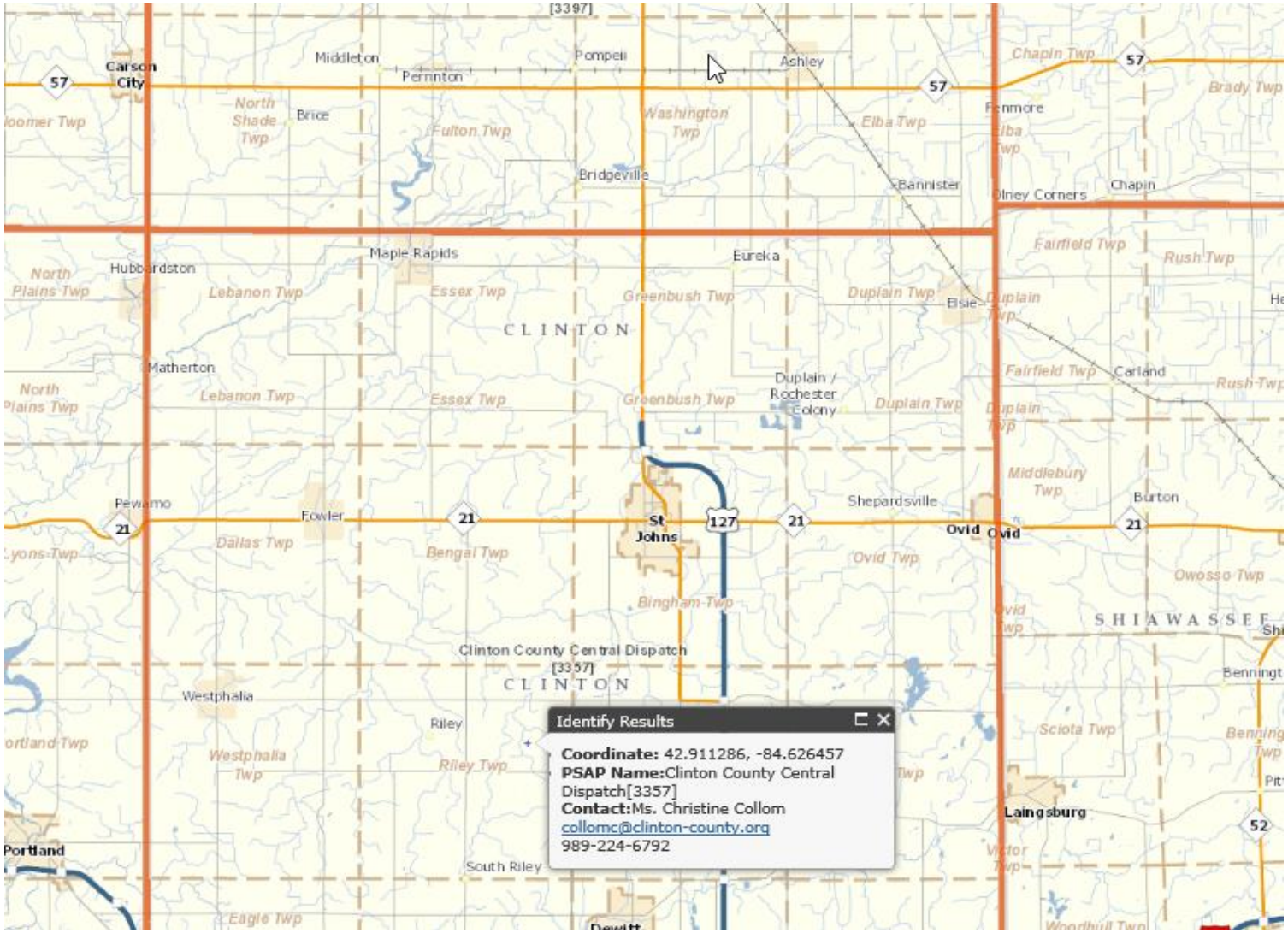
9-1-1 GIS Repository – Map Viewer Tools



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9-1-1 GIS Repository

STATE OF MICHIGAN
GIS REPOSITORY USER REQUEST

To register application users, the PSAP Director must provide the information in this table and return it via e-mail to armitagem@michigan.gov or fax it to (517) 241-0387, Attn: Mr. Michael Armitage. A description of each role is provided below the table.

911 Repository Role	Name	Organization	Email and phone #
PSAP Administrator			
Alternate PSAP Administrator(s) (Optional)			
Data Importer(s)			
Data Exporter(s)			
Restricted Administrator			

Name:_____ Signature: _____

If you have any questions or concerns about this process, please contact:
Mr. Michael Armitage, armitagem@michigan.gov at MSP at (517) 241-2809, fax (517) 241-0387 or
Mr. Mark Holmes, holmesm3@michigan.gov at CSS at (517) 373-7910, fax (517) 373-2939.

PSAP Administrator – This role is established for the person who will be managing the accounts for the users within a specific PSAP jurisdiction. This role will typically be assigned to the 911 Director. This access is limited to PSAPs that are a branch of the entity that is party to the 'memorandum of understanding' for the 911 GIS Repository.

Alternate PSAP Administrator(s) (optional) – This role is established for a person to provide a backup role to the PSAP Administrator for assigning logins or accounts. This role will have the same permissions level in the system as the PSAP Administrator.

Data Importer(s) – This role is established for a person who will be providing GIS data updates to the repository system. This role can be assigned to a PSAP staff member, county GIS department staff member or a vendor. This role is typically assigned to the person who is maintaining the GIS data.

Data Exporter(s) – This role is established for a person who will be extracting GIS data from the repository for 911 purposes on a regular basis. For example, the data exporter might be the person who typically integrates GIS data with existing CAD systems.

Restricted Administrator- This role is established as a 'view only' for PSAPs that are not a branch of the government which is party to the 'memorandum of understanding' for the 911 GIS Repository.

Continued GIS Coordination across Michigan

- Create data once, use many times
- Data from authoritative sources
- Data classification by data owners
- Regular data updates and maintenance
- Effective metadata
- Partnerships and data sharing agreements
- Consistent data for decision making
  - Local, state, federal, public
- Continued standardization and process improvement

Questions

Mark Holmes
holmesm3@Michigan.gov